Amendments to the Claims:

Please amend claims 2-7, 10 and 12-13, add new claims 56-60, and cancel claims 1 and 8-9. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (canceled).

2. (currently amended) The method of claim ~~1~~ 10 wherein the presence or absence of a nick in a DNA molecule is measured by determining the change in electrophoretic mobility of nicked DNA on an electrophoretic gel.

3. (currently amended) The method of claim ~~1~~ 10 wherein the presence or absence of a nick in a DNA molecule is determined by a SI nuclease assay.

4. (currently amended) The method of claim ~~1~~ 10 wherein the presence or absence of a nick in a DNA molecule is determined by a primer extension reaction.

5. (currently amended) The method of claim ~~1~~ 10 wherein the presence or absence of a nick in a DNA molecule is determined by a polymerase chain reaction amplification reaction.

6. (currently amended) The method of claim ~~1~~ 10 wherein the presence or absence of a nick in a DNA molecule is determined by a DNA sequencing assay.

7. (currently amended) The method of claim ~~1~~ 10 wherein the presence or absence of a nick in a DNA molecule is determined by a protein binding assay.

8. (canceled).

9. (canceled).

10. (currently amended) A method of detecting eukaryotic nicking transcription factor activity comprising the steps of:

a) providing a DNA template comprising at least one binding region for a transcription factor;

b) contacting the DNA template with at least one eukaryotic nicking transcription factor; and

c) detecting the presence or absence of a nick in the DNA template at or near the binding region of the eukaryotic nicking transcription factor, wherein the presence of a nick in the DNA template indicates nicking transcription factor activity.

11. (original) The method of claim 10, wherein the transcription factor is in a nuclear cell extract.

12. (currently amended) The method of claim 10, further comprising the steps of:

a) isolating the DNA template; and

b) ~~wherein the DNA template is inserted~~ inserting the DNA template into a viral or plasmid vector and ~~introduced~~ introducing the template into a cell.

13. (currently amended) The method of claim 10, ~~wherein the DNA template is fixed to a matrix~~, further comprising the step of fixing the DNA template to a matrix.

14. (original) The method of claim 13, wherein the matrix is a biological chip.

15-55. (canceled).

56. (new) The method of claim 10, wherein the eukaryotic nicking transcription factor comprises a site specific DNA binding transcription factor.

57. (new) The method of claim 56, wherein the eukaryotic nicking transcription factor comprises an enhancer binding protein.

58. (new) The method of claim 56, wherein the eukaryotic nicking transcription factor comprises a general transcription factor.

59. (new) The method of claim 10, wherein the eukaryotic nicking transcription factor regulates the transcription of structural RNA.

60. (new) The method of claim 10, wherein the eukaryotic nicking transcription factor regulates the transcription of protein encoding RNA.

61. (new) The method of claim 10, wherein the eukaryotic nicking transcription factor is selected from the group consisting of CREB, TFIIIC and c-jun.